

Attorney Docket No. VELOP0114US

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of

Applicant: Tonkovich et al.  
Serial No.: 10/765,705  
Filed: January 27, 2004  
For: PROCESS FOR PRODUCING HYDROGEN PEROXIDE USING MICROCHANNEL TECHNOLOGY  
Art Unit: Not yet known  
Examiner: Not yet known

### INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1345

Sir:

1. Pursuant to 37 C.F.R. 1.97 and 1.98, and in compliance with 37 C.F.R. 1.56, the Office's attention is directed to the patents, pending applications, publications and other information listed on the attached PTO-1449. A copy of each listed document is enclosed except for: (a) pending applications or (b) those previously cited or submitted to the Office in the following application(s) upon which this application relies for an earlier filing date under 35 U.S.C. 120:

Serial No.: \_\_\_\_\_  
Filing Date: \_\_\_\_\_

Regarding any document, publication or other information for which a date is not given on the attached PTO-1449, Applicant(s) believe(s) the same may qualify as "prior" art to this application and should be treated accordingly, although Applicant(s) reserve(s) the right to contest the prior art status of any document, publication or information, should issue arise.

2. Regarding each listed document that is not in the English language, an English-language translation accompanies this Statement as indicated on the attached PTO-1449 or a concise explanation of the relevance of the document is set forth in the following document(s):

- (a)  Copy of each English language version of a search report indicating the degree of relevance found by the foreign office of each document being submitted from the search report.
- (b)  Attachment entitled "Concise Explanation of Relevance of Non-English Language Documents".

3. Pursuant to 37 C.F.R. 1.97(b) this Statement is being filed (one must be checked):

- (a)  Within 3 months of the filing date, date of entry into the National Stage, or filing date of CPA.
- (b)  Before the mailing date of a first Office Action on the merits. If this Statement is not filed before the mailing date of a first Office Action on the merits, the required certification is given below or, in the absence thereof, the Office is authorized to charge the required fee set forth in 37 C.F.R. 1.17(p) to Deposit Account No. 18-0988 for consideration of this Statement.
- (c)  Before the mailing date of a first Office Action on the merits after a first or second submission after final rejection under 37 C.F.R. 1.129(a).

(d)  After the period set forth in 37 C.F.R. 1.97(b) but before the mailing date of either a final action or a notice of allowance.

(1)  The required certification is given below, or

(2)  Enclosed is a check covering the fee set forth in 37 C.F.R. 1.17(p) for consideration of this Statement, or

(3)  Charge the fee set forth in 37 C.F.R. 1.17(p) to Deposit Account No. 18-0988

(e)  After the mailing date of either a final action or a notice of allowance, but before payment of the issue fee. Petition hereby is made for consideration of this Statement and the required certification is indicated below.

(1)  Enclosed is a check covering the fee set forth in 37 C.F.R. 1.17(p), or

(2)  Charge the fee set forth in 37 C.F.R. 1.17(p) to Deposit Account No. 18-0988.

4. Certification (if applicable)

(a)  The undersigned hereby certifies that each item of information contained in this Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than 3 months prior to the filing of this Statement.

(b)  The undersigned hereby certifies that no item of information contained in this Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the undersigned's knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. 1.56(c) more than 3 months prior to the filing of this Statement.

5. The Commissioner is hereby authorized to charge any additional fees or credit any overpayment to Deposit Account No. 18-0988.

Respectfully Submitted,

RENNER, OTTO, BOISSELLE & SKLAR, LLP

By \_\_\_\_\_  
Neil A. DuChez  
Reg. No. 26,725

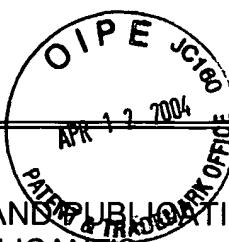
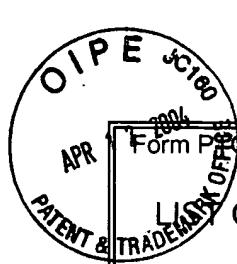
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**CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8**

I hereby certify that this correspondence (along with any paper referenced as being attached or enclosed) is being deposited on the below date with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date: 04/08/04

Janet Farr  
Janet Farr



Form PTO-1449 (Modified)		Atty Docket No.	Serial No.
		VELOP0114US	10/765,705
		Applicant: Tonkovich et al.	
(Use several sheets if necessary)		Filing Date	Group
		01/27/04	

## U.S. PATENT DOCUMENTS

Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
	3,336,112	08/15/67	Hooper	23	207	
	4,389,390	06/21/83	Dalton Jr. et al.	423	584	
	4,392,362	07/12/83	Little	62	514	
	4,516,632	05/14/85	Swift et al.	165	167	
	4,576,687	03/18/86	Hertl et al.	204	157.5	
	4,681,751	07/21/87	Gosser	423	584	
	4,772,458	09/20/88	Gosser et al.	423	584	
	4,832,938	05/23/89	Gosser et al.	423	584	
	4,889,705	12/26/89	Gosser	423	584	
	5,104,635	04/14/92	Kanada et al.	423	584	
	5,135,731	08/04/92	Gosser et al.	423	584	
	5,309,637	05/10/94	Moriarty	29	890.054	
	5,317,805	07/07/94	Hoopman et al.	29	890.03	
	5,611,214	03/18/97	Wegeng et al.	62	498	
	5,727,618	03/17/98	Mundinger et al.	165	80.4	
	5,811,062	09/22/98	Wegeng et al.	422	129	
	5,853,693	12/29/98	Ogasawara et al.	423	588	
	5,858,314	01/12/99	Hsu et al.	422	211	
	6,126,723	10/03/00	Drost et al.	96	4	
	6,126,914	10/03/00	Ogasawara et al.	423	588	
	6,216,343 B1	04/17/01	Leland et al.	29	890.032	
	6,129,973	10/10/00	Martin et al.	428	166	
	6,192,596 B1	02/27/01	Bennett et al.	34	76	
	6,200,536 B1	03/13/01	Tonkovich et al.	422	177	
	6,220,497 B1	04/24/01	Benz et al.	228	118	

Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
	6,224,845 B1	05/01/01	Pennetreau et al.	423	584	
	6,230,408 B1	05/15/01	Ehrfeld et al.	29	890.039	
	6,313,393 B1	11/06/01	Drost	136	201	
	6,342,196 B2	01/29/02	Beckman et al.	423	588	
	6,352,577 B1	03/05/02	Martin et al.	96	4	
	6,381,846 B2	05/07/02	Insley et al.	29	890.039	
	6,415,860 B1	07/09/02	Kelly et al.	165	748	
	6,488,838 B1	12/03/02	Tonkovich et al.	208	108	
	6,540,975 B2	04/01/03	Tonkovich et al.	423	659	
	6,576,214 B2	06/10/03	Zhou et al.	423	584	

## FOREIGN PATENT DOCUMENTS

Examiner Initial	Document Number	Date	Country	Class	Sub-class	Translation
						Yes      No
	97/32687	12/09/97	WO			Abstract
	98/55812	10/12/98	WO			
	00/06295	10/02/00	WO			
	01/10773 A1	15/02/01	WO			
	01/12312 A2	22/02/01	WO			
	01/54807 A1	02/08/01	WO			
	01/95237 A2	13/12/01	WO			
	03/078052 A1	25/09/03	WO			
	0 904 608 B1	19/12/01	EP			
	1 362 634 A1	19/11/03	EP			
	03/106386 A2	24/12/03	WO			

## OTHER ART

Examiner Initial	Author, Title, Date, Pertinent Pages, etc.
	Matlosz et al.; "Microreactors as Tools in Chemical Research"; Microreaction Technology; IMRET 5: Proceedings of the Fifth International Conference on Microreaction Technology.
	Srinivasn et al.; "Micromachined Reactors for Catalytic Partial Oxidation Reactions"; AIChE Journal; November 1997; Vol. 43, No. 11; pp. 3059-3069.
	TeGrotenhuis et al.; "Optimizing Microchannel Reactors by Trading-Off Equilibrium and Reaction Kinetics through Temperature Management; Prepared for presentation at IMRET 6 - 6 <sup>th</sup> International Conference on Microreaction Technology; March 2002.

Examiner Initial	Author, Title, Date, Pertinent Pages, etc.
	Wegeng et al.; "Compact Fuel Processors for Fuel Cell Powered Automobiles Based on Microchannel Technology"; Fuel Cells Bulletin No. 28; pp. 8-13.
	Rostami et al.; "Flow and Heat Transfer for Gas Flowing in Microchannels: a Review"; Heat and Mass Transfer 38 (2002) 359-367.
	Wan et al.; "1-Pentene Epoxidation in Titanium Silicalite-1 Microchannel Reactor: Experiments and Modelling"; Institution of Chemical Engineers; Trans IChemE; Vol. 81, Part 1, August 2003.
	The New Jersey Center for MicroChemical Systems (NJCMCS); "Engineering Research in the Realm of the Very Small"; On-Site Production of Hydrogen Peroxide Using Microchannel Reactor Technology; December 12, 2003; <a href="http://www.njcmcs.org/projects.htm">http://www.njcmcs.org/projects.htm</a> .
	Chemicals Project Fact Sheet; Microchannel Reactor System Design; "Microchannel Reactor Systems Could Allow for Energy-Efficient and Cost-Effective On-Site Hydrogen Peroxide Production"; Office of Industrial Technologies; U.S. Department of Energy; February 2003.
	A New Efficient Safe Direct Hydrogen Peroxide Process; "This New Clean Process May Replace the Existing Solvent -Based, Indirect Process Due To Its Simplicity, Reduced Energy Consumption and Lower Capital/Operating Costs"; Office of Weatherization and Intergovernmental Program; U.S. Department of Energy; August 2002.
	Svajda et al.; "Development of Catalytic Membranes for Direct Synthesis of Hydrogen Peroxide"; Karl-Winnacker-Institut., May 1, 2002.
	Rogers; Process Intensification; American Institute of Chemical Engineers; "Microchannel Reactor System for On-site H <sub>2</sub> O <sub>2</sub> Production by Controlled H <sub>2</sub> /O <sub>2</sub> Reaction"; Topical Conference Proceedings; Spring National Meeting, March 30-April 3, 2003.
	"Catalytic Synthesis of Hydrogen Peroxide"; Chemical Week, September 10, 2003, 39.
	Lietze; "Crimped Metal Ribbon Flame Arrestors for the Protection of Gas Measurement Systems"; Journal of Loss Prevention in the Process Industries, Volume 15, Issue 1, January 2002, pages 29-35 (Abstract).
	Waku et al.; "Effects of O <sub>2</sub> Concentration on the Rate and Selectivity in Oxidative Dehydrogenation of Ethane Catalyzed by Vanadium Oxide: Implications for O <sub>2</sub> Staging and Membrane Reactors"; Ind. Eng. Chem. Res., 2003, 42, 5462-5466.

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

#### Information Disclosure Statement PTO-1449 (Modified)

The identification of any reference is not intended to be, and should not be understood as being, an admission that such publication, in fact, constitutes "prior art" within the meaning of applicable law since, for example, a given reference may have a later effective date than first seems apparent or the reference may have an effective date which can be antedated. The "prior art" status of any reference is a matter to be resolved during prosecution.  
Z:\SEC132\NADivelocys114\IDS.wpd (IDS1449.FRM) (2/97)